



7
14
8-20-02
PATENT
P-3236-US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): STARK, Moshe

SERIAL NO.: 09/993,917

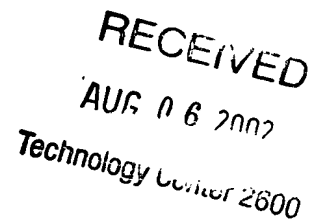
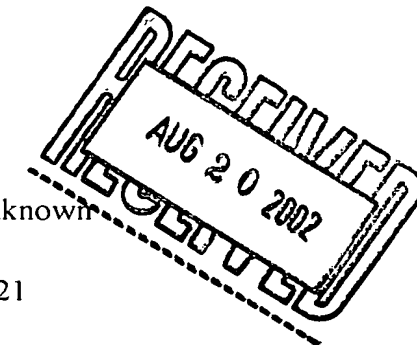
EXAMINER: Unknown

FILED: November 27, 2001

GROUP ART UNIT: 2621

FOR: PROGRAMMABLE RESOLUTION CMOS IMAGE SENSOR

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231



Sir:

INFORMATION DISCLOSURE STATEMENT

Pursuant to 37 C.F.R. §§1.56, 1.97 and 1.98, this Information Disclosure Statement includes:

1. ☒ Documents including patents, publications, and other information listed on the attached Form PTO-1449 for consideration by the Examiner;
2. ☐ Form PTO-1449 which lists documents including patents, publications and other information for consideration by the Examiner but in accordance with 37 C.F.R. 1.98(d) does not include those documents which have been previously cited or submitted to the Patent Office in the following prior application U.S. Serial No. _____, filed _____ which is properly identified and relied on.
3. ☒ Other information for the Examiner's consideration which was cited in a communication from a foreign patent office in a counterpart foreign application.

The information herein cited is only in fulfillment of Applicant(s) duty of candor in disclosing all information brought to Applicant(s) attention. This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art". If it should be determined that any of the

listed documents do not constitute "prior art" under United States law, Applicant(s) reserve the right to present to the office the relevant facts and law regarding the appropriate status of such documents.

Applicant(s) further reserve(s) the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

In accordance with MPEP Sections 609 and 707.05(b), it is requested that each and every document cited (including any cited in applicant's specification which is not repeated on the attached Form PTO-1449) be given thorough consideration and that it be cited of record in the prosecution history of the present application by initialing on Form PTO-1449. Such initialing is requested even if the Examiner does not consider it to be prior art for any reason, or even if the Examiner does not believe that the guidelines for citation have been fully complied with. This is requested so that each document becomes listed on the face of the patent issuing on the present application and is evidence that the Examiner has considered the document.

This Information Disclosure Statement is being filed:

I) ☒ Within three (3) months of filing the subject Application or entry of the subject Application into the national stage or before mailing of the first Office Action on the merits whichever event occurs last pursuant to of 37 C.F.R §1.97 (b); or

II) ☐ After the period specified in (I) but before the mailing date of either a final Official Action under 37 C.F.R §1.113 or a notice of allowance under 37 C.F.R §1.311 whichever occurs first;

1. ☐ The undersigned hereby states that each item of information listed on the Form PTO-1449 was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three (3) months prior to the filing of this Information Disclosure Statement; or

2. ☐ the undersigned hereby authorizes the Patent Office to charge the fee in the amount of \$180.00 under 37 C.F.R §1.17 (p) to Deposit Account 05-0649.

III) ☐ After the period in (I) and (II) but before the payment of the issue fee,

1. The Undersigned hereby states:

a) ☐ that each item of information cited on the form PTO-1449 was cited in a communication from a foreign Patent Office in a counterpart

foreign application not more than three (3) months prior to the filing of this Information Disclosure Statement; or

b) ☐ that no items of information contained in Form PTO-1449 was cited in a communication from a foreign patent office in a counterpart foreign application, and to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement; and

2. ☐ The Undersigned hereby authorizes the Patent Office to charge the Petition fee in the Amount of \$180.00 under 37 C.F.R. §1.17 (p) to Deposit Account 05-0649.

Except for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 05-0649.

Respectfully submitted,



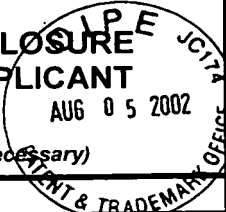
Vladimir Sherman

Attorney for Applicant(s)

Registration No. 43,116

Dated: July 31, 2002

Eitan, Pearl, Latzer & Cohen-Zedek
One Crystal Park, Suite 210
2011 Crystal Drive
Arlington, VA 22202-3709
Tel: 703.486.0600
Fax: 703.486.0800

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	09/993,917
				Filing Date	November 27, 2001
				First Named Inventor	STARK, Moshe
				Group Art Unit	2621
				Examiner Name	Unknown
Sheet 1 of 4				Attorney Docket Number	P-3236-US

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	AA	5,471,515		Fossum et al.	November 28, 1995	
	AB	5,049,752		Kalaf et al.	September 17, 1991	
	AC	5,721,425		Merril	February 24, 1998	
	AD	5,369,047		Hynecek	November 29, 1994	
	AE	5,949,483		Fossum et al.	09-07-1999	
	AF	09/426,452		Stark	10-25-1999 (filing date)	
	AG	09/516,168		Stark	02-29-2000 (filing date)	
	AH	09/629,703		Stark	07-31-2000 (filing date)	
	AI	09/993,886		Stark	11-27-2001 (filing date)	
	AJ	4,471,228		Nishizawa et al.	09-11-1984	ALL
	AK	4,635,126		Kinoshita et al.	01-06-1987	Column 3, line 8-column 6 line 59
	AL	4,761,689		Takatsu et al.	08-02-1988	ALL
	AM	4,583,002		Kondo et al.	04-15-1986	ALL
	AN	4,984,002		Kokubo	01-08-1991	ALL
	AO	5,546,127		Yamashita et al.	08-13-1996	Column 7 line 6-column 10 line 48
	AP	5,541,654		Roberts	07-30-1996	ALL
	AQ	5,576,762		Udagawa	11-19-1996	ALL
	AR	5,638,123		Yamaguchi	06-10-1997	Column 6 line 53- column 10 line 43
	AS	5,638,120		Mochizuki	06-10-1997	ALL
	AT	5,877,808		Iizuka	03-02-1999	ALL
	AU	6,122,008		Komobuchi et al.	09-19-2000	ALL
	AV	6,141,049		Harada	10-31-2000	ALL
	AW	5,539,461		Andoh et al.	07-23-1996	Figs. 3A-3B, column 14, lines 25-40
	AX	5,485,004		Suzuki et al.	01-16-1996	Figs. 1-2, column 6, lines 15-40, column 7, lines 30-35, column 8, lines 8-65
	AY	3,911,467		Levine et al.	10-07-1975	ALL
	AZ	4,942,473		Zeevi et al.	07-17-1990	ALL
	BA	5,262,871		Wilder et al.	11-16-1993	ALL
	BB	5,278,660		Sugiki	01-11-1994	ALL

Examiner Signature	Date Considered
-----------------------	--------------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	09/993,917
		Filing Date	November 27, 2001
		First Named Inventor	STARK, Moshe
		Group Art Unit	2621
		Examiner Name	Unknown Technology Center 2600
Sheet	2	of	4
		Attorney Docket Number	P-3236-US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	BC	FOSSUM et al., "Application of the Active Pixel Sensor Concept to Guidance and Navigation", SPIE, Vol. 1949, paper 30, 1993	<input type="checkbox"/>
	BD	ROGER PANIACCI et al., "Programmable multiresolution CMOS active pixel sensor", 72/SPIE, Vol. 2654, 1996, pp. 72-79	<input type="checkbox"/>
	BE	ZHIMIN ZHOU et al., "Frame Transfer CMOS Active Pixel Sensor with Pixel Binning", IEEE Transactions on Electron Devices, Vol. 44, No. 10, October 1997, pp. 1764-1768	<input type="checkbox"/>
	BF	LISA G. McILRATH et al., "Design and Analysis of 512X768 Current-Mediated Active Pixel Array Image Sensor", IEEE Transactions on Electron Devices, Vol. 44, No. 10, October 1997, pp. 1706-1715	<input type="checkbox"/>
	BG	R. DANIEL McGRATH et al., "Current Mediated, Current-Reset 768X512 Active Pixel Sensory Array", ISC97/Session 11/Imaging Circuits and Systems/Paper FA 11.2, p. 182-183	<input type="checkbox"/>
	BH	CHIH-CHENG HSEIH et al., "A new Cryogenic CMOS Readout Structure for Infrared Focal Plane Array", IEEE Journal of Solid-State Circuits, Vol. 32, No. 8, August 1997, pp. 1192-1199	<input type="checkbox"/>
	BI	NANYOUNG YOON et al., "A New Unit Cell of Current Mirroring Direct Injection Circuit for Focal Plane Arrays", SPIE, Vol. 3061, pp. 93-101	<input type="checkbox"/>

Examiner Signature	Date Considered
--------------------	-----------------

* **EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

<p>Substitute for form 1449B/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>(use as many sheets as necessary)</p>		<p>Complete if Known</p> <table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%;">Application Number</td><td style="width: 50%;">09/993,917</td></tr><tr><td>Filing Date</td><td>November 27, 2001</td></tr><tr><td>First Named Inventor</td><td>STARK, Moshe</td></tr><tr><td>Group Art Unit</td><td>2621</td></tr><tr><td>Examiner Name</td><td>Unknown</td></tr><tr><td>Attorney Docket Number</td><td>P-3236-US</td></tr></table>		Application Number	09/993,917	Filing Date	November 27, 2001	First Named Inventor	STARK, Moshe	Group Art Unit	2621	Examiner Name	Unknown	Attorney Docket Number	P-3236-US
Application Number	09/993,917														
Filing Date	November 27, 2001														
First Named Inventor	STARK, Moshe														
Group Art Unit	2621														
Examiner Name	Unknown														
Attorney Docket Number	P-3236-US														
Sheet	3	of	4												

AUG 05 2002
PATENT & TRADEMARK OFFICE

RECEIVED

AUG 06 2002

Technology Center 2600

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	BJ	J. R. WILLISON, "Signal Detection and Analysis", Handbook of optics, Vol. 1, Part 6, Chapter 18, McGraw Hill, 1995	<input type="checkbox"/>
	BK	T. J. TREDWELL, "Visible Array Detectors", Handbook of Optics, Vol. 1, Part 6, Chapter 22, McGraw Hill, 1995	<input type="checkbox"/>
	BL	L. J. KOZLOWSKY AND W. F. KOSONOCKY, "Infrared Detector Arrays", Handbook of Optics, Vol. 1, Part 6, Chapter 2, McGraw Hill, 1995	<input type="checkbox"/>
	BM	ERIC R. FOSSUM AND BEDABRATA PAIN, "Infrared Readout Electronics for Space Science Sensors: State of the Art and Future Directions", SPIE, Vol. 2020, Infrared Technology XIX (1993), pp.262-285	<input type="checkbox"/>
	BN	Orly Yadid Pecht et al.: "Optimization of Noise and Responsivity in CMOS Active Sensors for Detection of Ultra Low Light Levels", SPIE Vol. 3019, 0277-786X/97, pp.125-136	<input type="checkbox"/>
	BO	Eric R. Fossum - "Ultra Low Power Imaging Systems Using CMOS ImageSensor Technology", SPIE Vol. 2267, 0-8194-1591-X/94, pp. 107-111	<input type="checkbox"/>
	BP	Eric R. Fossum: "Active Pixel Sensors: Are CCD's Dinosaurs?", SPIE Vol. 1900, 0-8194-1133-7/93, pp. 2-14	<input type="checkbox"/>
	BQ	Wolfgang Wittenstein et al: "Simulation Study on Fixed Pattern Noise and MRTD", SPIE Vol. 2552, 0-8194-1911-7/95, pp. 489-501	<input type="checkbox"/>

Examiner Signature	Date Considered
--------------------	-----------------

* **EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → +

PTO/SB/08A (10-96)

Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
<div style="border: 1px solid black; border-radius: 50%; width: 150px; height: 150px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px;">PATENT & TRADEMARK OFFICE</div> <div style="text-align: center;"> AUG 05 2002 </div> </div>				Application Number	09/993,917
				Filing Date	November 27, 2003
				First Named Inventor	STARK, Moshe
				Group Art Unit	2621
				Examiner Name	Unknown
Sheet	4	of	4	Attorney Docket Number	P-3236-US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (where appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	BR	E. Mottin et al.: "An Improved Architecture of IRFPA Readout Circuits", SPIE Vol. 3061, 0277-786/97, pp. 117-126	<input type="checkbox"/>
	BS	B. Pain et al.: "Low-Power, Low-Noise Analog Circuits for on Focal-Plane Signal Processing of Infrared Sensors", In Infrared Detectors and Instrumentation, Pro. SPIE, Vol. 1946, pp. 365-374, 1993	<input type="checkbox"/>
	BT	Steven Decker et al.: "A 256 X 256 CMOS Imaging Array with Wide Dynamic Range Pixels and a Column-Parallel Digital Output", IEEE Journal of Solid-State Circuits, Vol. 33, No. 12, December 1998, pp. 2081-2091	<input type="checkbox"/>
	BU	Chih-Cheng et al.: "A new CMOS Readout Circuit Design for IRFPA with Adaptive Gain Control and Current-Mode Background Suppression", 0703-3073-0/96, 1996 IEEE, pp. 137-140	<input type="checkbox"/>
	BV	Hon-Sum Wong: "Technology and Device Scaling Considerations for CMOS Imagers", IEEE Transactions on Electron Devices, Vol. 43, No. 12, December 1996, pp. 2131-2142	<input type="checkbox"/>
	BW	Hon-Sum Wong et al.: "CMOS Active Pixel Image Sensors Fabricated Using a 1.8V, 0.25 gm CMOS Technology", 0-7803-3393-4, 1996 IEEE, IEDM 96-915, pp. 35.5.1-35.5.4	<input type="checkbox"/>

Examiner Signature	Date Considered
--------------------	-----------------

* **EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.